

Physical Science I Laboratory

PHSC 110 (1 credit hour)

Fall 2009

Course Description: The goal of this course is to present active laboratory exercises to compliment the lecture course Physical Science I (PHSC 100). Activities and exercises will address concepts presented in PHSC 100 in addition to emphasizing the personal application of science, the process skills, problem solving, and discovery/inquiry learning.

Instructor: Dr. Richard Gibbs
Division of Math and Science
Delta Community College
Coenen 127 and Hanna 223
e-mail: rgibbs@ladelta.cc.la.us
Phone: 318-342-3763

Office Hours: TBA

Required Text: Laboratory Exercises and Handouts will be provided by your instructor. You will also need a calculator such as TI-30 or comparable.

Prerequisites: Eligibility to enroll in MATH 099 or higher level math.

Grading:

The grades in a course constitute a RATING of your performance relative to the standards established by the professor, not a RANKING of your standing in the class relative to everyone else, and the grade you receive will be a reflection of your performance in the course, regardless of whether anybody or everybody in the class performed well or poorly.

The final grade in this course will be determined based on the average of about 12 lab grades (120 points) and attendance (25 points). That percentage will then determine your final grade according to the following scale.

| | | |
|----------------|-------------|------------|
| 90 to 100 = A | lab reports | 120 points |
| 90 to 89 = B | Attendance | 25 |
| 69 = D | | |
| 00.0 to 59 = F | | |

BlackBoard

Make sure you have a Blackboard account. This allows you to access the Blackboard system (Bb), which houses the web site for the course. I may periodically send you email, via the class web. Therefore, please make sure to keep an eye on your email account throughout the term. Some assignments/tests will be given via blackboard.

Email

All students are expected to have a current, La Delta email address. It is advisable to update your BlackBoard account with your current email address. When sending email to the instructor, please use the course name or number in the subject line.

Before Coming to Class: Read each exercise. By doing this, you will have a general idea about what you are going to do, as well as why you're going to do it. This will save time and help you finish the experiments.

When in Lab:

1. Don't begin the exercise until the laboratory instructor gives you specific instructions. The exercise may be modified.
2. Stay focused as you work. If you stay busy, you'll be able to finish each exercise within the allotted time.
3. Discuss your observations, results, and conclusions with your instructor and lab partners.
4. Always follow instructions and safety guidelines.
5. If you have questions, ask the instructor.

Laboratory Safety Rules:

1. No eating, drinking, or chewing in the laboratory.
2. Hands must be washed every time you enter or exit the lab.
3. Laboratory tables must be disinfected at the beginning and at the end of each lab period.
4. Book bags do not belong on the lab benches.
5. All stools are to be placed under the tables at the end of lab.
6. All drawers are to be shut before leaving lab.
7. If glass is broken, do NOT pick it up. Notify the instructor.
8. Notify the instructor of any spill, no matter how minor.
9. Any injury must be reported to the instructor immediately.
10. All hazardous/biological waste must be placed in the biohazard waste container.
11. No item may be removed from the lab without the instructor's permission.
12. Microscopes must be handled with the utmost care. Students must adhere to the acceptable practices of using the microscopes.
13. Take notice of exits, fire extinguishers, and the eye-wash station.

Learning Outcomes:**Upon completion of this course, the student will be able to:**

1. Apply laboratory activities and exercise to the major concepts in physical science relating to physics including motion, gravity, sound, light, magnetism, etc.
2. Discuss orally and explain in writing how physical science affects our everyday lives.
3. Explain the importance of physical science to society.
4. Explain and give examples of the relationship of science, technology, and society.
5. Utilize the process skills and problem-solving skills to solve laboratory applications in physical science:
 - state the principles of sound experimental design
 - form sound scientific questions and answer them using the scientific method
 - conduct experiments that demonstrate the basic principles of physical science
 - solve mathematical equations and use quantitative reasoning to solve problems
 - collect and interpret quantitative and qualitative data, and use critical thinking to form reasonable conclusions based upon this data
 - communicate hypothesis, data, and conclusions clearly and effectively
 - use computer technology to locate information in the physical sciences, and evaluate this information for currency, accuracy, relevance, and reliability

College and Classroom Policies**A. Students with Disabilities**

The Office of Student Counseling and Disability Services coordinates campus-wide efforts to provide services and accommodations for students with disabilities. In compliance with the American Disabilities ACT (ADA), students with documented disabilities who need courses accommodations, have emergency medical information or require special arrangements for building evacuation should contact Dr. Ruth Osborne the first two weeks of class at 318-342-3707 or in Coenen 144.

B. Attendance

Attendance policies correspond to those listed in the *Delta Academic Catalog*. Class attendance is regarded as an obligation as well as a privilege, and all students are expected to attend regularly and punctually all classes in which they are enrolled. A student shall submit written excuses for all class absences to the appropriate instructor within three class days after the student returns to the respective class. Students are responsible for all class work missed regardless of the reason for the absence.

C. Academic Support Services: Delta provides students with resources and support outside of the classroom through the Library/LRC in Coenen 150 (<http://www.ladelta.cc.la.us/library>) and a Student Success Center which provides workshops, resources, and tutorial support.

D. Electronic Devices/Other noise-making devices

Cellular telephones, beepers, and other noise-making devices must be turned to vibrate during class time. If this policy is not adhered to, you will be asked to leave the room to avoid further interruptions.

E. Safety Regulations

No firearms, weapons, tobacco products, alcoholic beverages, or illegal drugs are permitted in the classroom. In the event you do not adhere to this policy, you will be asked to leave the classroom and expulsion from the college is possible.

F. Academic Integrity

Louisiana Delta Community College upholds standards of academic integrity of its students and faculty. Academic integrity is essential to assure learning through assessment. Students are responsible for being aware of and adhering to academic rules and regulations for the college and classroom as defined in the *Delta Academic Catalog* and *Delta Student Handbook*. Academic dishonesty includes but is not limited to cheating, fabrication, plagiarism, interference, misrepresentation, violation of class rules, and fraud. Identified instances of academic misconduct or dishonesty warrant disciplinary actions by the instructor or college. Please refer to Delta's *Student Handbook* for more information.

LOUISIANA DELTA COMMUNITY COLLEGE CODE OF STUDENT CONDUCT

All members of the College community are expected to respect the principles of honesty and mutual trust embodied in the honor code. Students are responsible for preparing their own written work in every class unless specifically permitted by the instructor to combine efforts on an assigned project. Students are expected to understand the meaning of plagiarism and to avoid all suspicion of plagiarism in papers prepared. Furthermore, students are expected neither to sanction nor tolerate violation of the honor code by others.

Students will not give or receive any unauthorized aid on any examination or paper. If a student witnesses anyone else doing so, that student must be reported immediately to the faculty member and/or the appropriate College administrator.

ACADEMIC MISCONDUCT

Types of Academic Misconduct (1.01)

Although all academic misconduct is wrong, premeditated acts of academic misconduct represent a greater threat to the integrity of the College than do unpremeditated acts of academic misconduct.

Categories of Academic Misconduct (1.02)

Cheating is the intentional use of inappropriate assistance, information, materials, or study aids in any academic exercise. Cheating includes the use of unauthorized assistance, information, or materials on tests, homework, quizzes, papers, projects, and all other academic assignments. Additionally, students who provide such unauthorized assistance are also guilty of cheating.

Fabrication is defined as altering official college documents, forging signatures of college officials or other individuals, or changing grades and other academic records. Fabrication also includes submitting false records to gain admission to the College. Furthermore, any oral or

written misrepresentation of truth in any communication with College administrators, faculty, or staff is also fabrication.

Plagiarism involves submitting another person's ideas, words, data, arguments or sentence structure as the student's own without proper documentation.

Misrepresentation is intentionally presenting oneself as someone else, or intentionally misrepresenting a condition or situation to gain credit or concessions on academic work, including make-up tests, projects, and class assignments.

Violation of class rules is the intentional failure to follow the class policies concerning assignments and behavior.

Other forms of academic misconduct include **complicity**, the willing involvement with others in any academic misconduct; **software fraud**, the unlawful downloading and copying of computer software used in the creation of academic work; and **multiple submissions of work**, handing in academic work that was done previously by the student for another class, or by someone else.

Disciplinary Sanctions for Academic Misconduct (1.03)

Depending on the type of violation, the number of times a student has committed an offense, and the discretion of the instructor, penalties may include any combination of the following:

1. Loss of partial credit for the assignment.
2. Reduced grade for the course.
3. Grade of "F" for the course.
4. Zero assigned to test or assignment.
5. Academic Probation
6. Counseling
7. Academic Suspension
8. Expulsion

Administration of Penalties (1.04)

Instructors assign penalties to the student based on the above criteria. Student appeals of the penalty will be directed to the appropriate Academic Supervisor, or, if necessary, to the Dean of Instruction.

Should the student's violation of the Academic Honesty Policy warrant probation, suspension, or expulsion, the matter will be referred to the **Admissions and Academic Appeals Committee**. **Appeals of penalties will be directed to the Vice Chancellor of Academic and Student Affairs.**

The complete Academic Misconduct policies and the Due Process Procedure (sections 1.05-1.06) are listed in the Student Handbook.

PHSC 110
Physical Science I LAB
TENTATIVE SCHEDULE
FALL 2009

| Monday | Lab Exercise | Additional Notes |
|---------------|--|---|
| 1 Aug 24 | Density of Solids and Specific density | Mass, volume geometry, Cube, Cylinders |
| 2 Aug 31 | Archimede's principle | Bouyancy, displacement |
| 3 Sept 7 | Labor Day No Lab | Labor Day No Lab |
| 4 Sept 14 | The Force Table | Vectors and vector addition, Force Metric units |
| 5 Sept 21 | Motion and cart dynamics | Position, velocity, acceleration |
| 6 Sept 28 | Flow rate of fluids and viscosity | Pressure, Bernoulli's principle, Venturi meter |
| 7 Oct 5 | Thermal equilibrium and Energy transfer | Temperature scales, heat, energy, calorimetry, Electrical energy |
| 8 Oct 12 | Free Fall and "g" | Acceleration due to gravity, Galileo, Space-Time plots |
| 9 Oct 19 | Pressure/temperature relations | Gas laws, metric units, absolute zero. |
| 10 Oct 26 | Mechanical equivalent of heat | Joule, kilocalorie, specific heat |
| 11 Nov 2 in | Focal length of a thin lens | October 28th = Last day to drop with a "W" Thin lens formula. |
| 12 Nov 9 | Lens magnification | Object/ image classification |
| 13 Nov 16 | Image from multiple lens setup | Virtual images, magnifier |
| 14 Nov 23 | Thanksgiving Holiday No Lab | Thanksgiving Holiday No Lab |
| 15 Nov 30 | Conductivity checker | Ions, solutions, complete circuits |
| 16 Dec 7 | Radioactivity and a radiation survey | Half-Life, ratemeters, Geiger counter |